DOW CHEMICAL
MIDLAND A 48633

DOW CHEMICAL U.S.A.

September 5, 1984

MICHIGAN DIVISION
MIDLAND, MICHIGAN 48640

Mr. Mike Jury
Air Quality Division
MI Department of Natural Resources
State Office Building
411-J East Genesee
Saginaw, MI 48607

Dear Mr. Jury:

SUBJECT: Region V, EPA Inspection

Please be advised that the date of determination for plant shutdown of Chlor-Alkali operation in Midland was May, 1982.

Sincerely,

Gary R. Vearink

G. R. Vearink
Environmental Services
628 Building

GRV/yv

AB FILE

ASBESTOS NESHAPS COMPLIANCE INSPECTION REPORT
SOURCE IDENTIFICATION:

Dow Chemical Company
Midland, Michigan 48640
November 13, 1979

PURPOSE

The Dow Chemical Company was inspected by GCA to determine compliance with 40 CFR, Part 61, Subpart B-National Emission Standard for Asbestos. The facility is subject to the asbestos NESHAPS because it manufactures chlorine (diaphragm cell method) using commercial asbestos. Company officials asserted a business confidentiality claim to all information obtained during the inspection. Therefore, all information disclosed in this report is considered confidential and should be handled in accordance with the regulations set forth in 40 CFR, Part 2, Subpart B, as amended March 23, 1979.

PERSONNEL

Mr. David Wilson	Dow Chemical Co.	Senior Environmental Specialist
Mr. Larry Washington	Dow Chemical Co.	Technical Manager - Environmental Services
Mr. H. V. Wait	Dow Chemical Co.	Section Manager of Chlor-Alkali
Mr. Mike Seidel	Dow Chemical Co.	Plant Superintendent - Chlor-Alkali
Mr. Joe Selevicius	Dow Chemical Co.	Supervisor of Cell Services
Mr. Joseph Hoeflein	GCA/Technology Division	Environmental Engineer

PLANT LAYOUT

The Dow Chemical Company, located on 2,200 acres in the industrial southern section of Midland, manufactures chlorine via the asbestos diaphragm cell process. This facility employs 6,300 people and normally operates 350 days/year. The chlor-alkali process operation, located on 16 acres, employs about 200 people and runs 24 hours/day and 7 days/week.

PROCESS DESCRIPTION

Chlorine is manufactured at this plant using a continuous asbestos diaphram chlor-alkali process. This process runs continuously in four operating sessions each year. This means that four times each year cells are renewed and raw asbestos waste is handled and landfilled. During the inspection, chlorine was being made, and the process was running at the high end of its capacity. However, no cells were being renewed, and no waste material containing asbestos was being handled.

Chlor-alkali cell renewal takes place in what is known as the cell area. A foreign made and completely self-contained bag-opening machine tears open the bags containing raw asbestos and empties the asbestos into a slurry tank. The slurry from the tank comes in contact with the cathode in a pulling tank and the cell results. The cells are transported to the chlorine manufacturing area for installation.

Raw asbestos is received at this plant at a rate of about 50,000 to 100,000 pounds per year. The chrysotile fibers, manufactured by VAG, are a mixture of long and short fibers. Usually, two truck loads of the 50- and 100-pound bags are received each year. The raw asbestos fibers are packaged in plastic-coated fiber bags and are stored in a warehouse until needed.

Plant officials have elected to meet the no visible emissions standard for their asbestos-related operations.

PROCESS EMISSIONS AND AIR POLLUTION CONTROL DEVICES

The chlor-alkali chlorine manufacturing process is completely enclosed when it is running. Consequently, no emissions containing asbestos are expected. This facility has no air pollution control devices associated with any part of this process. The raw asbestos bag-opening and cell-washing operations (waste handling and disposal) are the only potential asbestos emission sources at this plant and are discussed below.

ASBESTOS WASTE HANDLING AND DISPOSAL PRACTICES

Asbestos-containing waste material, which must be handled at this facility, includes the empty bags which contained the raw asbestos and a moist solid waste from the cell-washing operation.

The bag opening station described above is completely self-contained and located inside a building in the cell area. Once the bags have been emptied, they are shoved by this machine into a 4- to 6-mil, 40-gallon plastic bag. This bag covers the end of a chute extending from the bag-opening station. When full, the bag is tied off with twine, labeled, and stored nearby. Eventually, it, along with other bags, is taken to a landfill.

When an operating session is completed, the spent cells are transported to the cell washroom. Here a set of traveling water spray nozzles moves along the cathodes and strips off the asbestos coating on the cells with a water jet. The water and asbestos drains to a tank below the washroom. The metallic part of the cathode is reused. In the tank below the washroom, the solids are separated from the water. The solids, in a sloppy form, are scraped from the tank and stored in a trough-like waterproof dumpster. This dumpster is brought to the washroom when it is needed. Once the cell washing is complete, the dumpster is transported to the landfill and dumped. The high water content of the slurry is more than adequate to suppress dust generation in transit and when dumping.

All asbestos waste is carried in a special and exclusive trip to the landfill. This is easily accomplished since waste is generated only four times each year.

During the plant visit, the cell area, including the bag-opening machine, and the cell washroom area were inspected. No waste which appeared to contain asbestos was seen. Since it was during an operating session, none of the asbestos-handling equipment was operating, and no waste material was being generated.

LANDFILL OPERATIONS

The Dow Chemical Company operates a landfill site on its own property in Midland and hauls its own waste materials to this site. The landfill operation has been reviewed by the Michigan DNR. The site was operating during the inspection, but no asbestos waste was being handled. Waste material received at the site is covered by general plant refuse, dirt, and/or asphalt each day. A sign identifying the site was posted at the entrance and a 6-foot fence surrounded the landfill. It appeared that waste was being handled effectively. Plant officials stated that the expected lifespan of the site is 3 to 5 years.

AB FILE

EPA FILE NUMBER MICHIGAN Pollutant Asbestos

Source DOW CHEMICAL GCA Personnel Anderson

Owner/Operator MIDLAND Date Reviewed 1/10/78

NESHAPS responsibilities delegated to Michigan DNR 6/15/77

NESHAPS - COMPLIANCE STATUS GENERAL PROVISIONS

		On File	Missing	Comments
	SOURCE REPORTING			
61.07	Application of Approval of Construction/Modification	☐	☐	
61.10a	Initial Report containing the following information must be submitted ~~within 90 days of effective date~~:	☑	☐	
..10a1	Name and address of owner	☑	☐	
61.10a2	Location	☑	☐	
61.10a3	Type of hazardous pollutant emitted	☑	☐	
61.10a4	Process description - emission points	☑	☐	
61.10a5	Weight/month of hazardous material being processed - for preceding 12 month period	☑	☐	
61.10a6	Description of control equipment for each point source control efficiency (%)	☑	☐	
61.10a7	Statement concerning compliance	☑	☐	
61.10b	WAIVER REQUEST (Compliance and Emission Tests)			N/A
61.10b1	Description of controls to be installed to meet standard	☐	☐	
	Compliance Schedule			
61.10b2i	Date when contracts are awarded or filed for control equipment	☐	☐	
61.10b2ii	Date of start of on-site construction	☐	☐	
.10b2iii	Date of completion	☐	☐	
61.10b2iv	Date when final compliance will be achieved	☐	☐	
61.10b3	Description of interim emission control steps (changes in plans must be filed within 30 days of change)	☐	☐	

EPA FILE NUMBER MICHIGAN1 GCA Personnel Anderson

Source DOW CHEMICAL Date Reviewed 1/10/78

Owner/Operator MIDLAND

NESHAPS - ASBESTOS

	On File	Missing	Comments
61.22e Spraying Greater than 1% by weight			
20 day prior notice required	☐	☐	
Name, address of owner	☐	☐	
Location of spraying operation	☐	☐	
Procedures to meet regulation requirements:			
(i) control see 61.23	☐	☐	N/A
(ii) other approved method for no visible emissions	☐	☐	
61.22j Waste Disposal for Manufacturing, Fabricating, and Spraying Operations			
Brief description of process	☑	☐	
Average weight of waste disposal of kg/day	☑	☐	
Description of control methods used	☑	☐	
Type of disposal site, name of operator, name and location of site	☑	☐	
Must meet requirements of 61.25	☐	☑	
Waste mixed with water, sealed into containers prior to disposal	☐	☐	waste asbestos bags sealed in plastic bags and taken to industrial sanitary covered landfill
Friable waste formed into non-friable pellets prior to disposal	☐	☐	
Approved alternative disposal method	☐	☐	
61.22k Waste Disposal for Asbestos Mills			
Brief description of process	☐	☐	
Average weight of waste disposed of kg/day	☐	☐	
Description of control methods used	☐	☐	
Type of disposal site, name of operator, name and location of site	☐	☐	N/A
Must meet requirements of 61.25	☐	☐	
Wetting agent used on dust and tailings prior to disposal at site	☐	☐	
Approved alternative disposal method	☐	☐	

NESHAPS - ASBESTOS (Continued)

	On File	Missing	Comments
61.22 Inactive Waste Disposal Sites			
Brief description of site	☐	☐	
Methods used to meet standard	☐	☐	N/A
Must meet requirements of 61.25 and have 2 feet of final cover or vegetation	☐	☐	
61.23 Air Cleaning Requirements			Fabric filter = secondary control device
Fabric filters	☑	☐	
Operating Δp less than 4 inches water	☑	☐	> 5.5" W.G.
Air flow permability woven fabric < 30 $ft^3/min/ft^2$ except for ore dryers 40 $ft^3/min/ft^2$	☑	☐	air flow reported as 1000 cfm/ft^2
Air flow permability felted fabric < 35 $ft^3/min/ft^2$ except for ore dryers 45 $ft^3/min/ft^2$	☐	☐	
Density of fabric at least 14 ounces/yd	☐	☑	
Thickness of fabric at least 1/16 inch	☐	☑	
Synthetic fabric must contain spun fill yarn	☐	☑	
Approved alternative control equipment	☐	☐	N/A
61.24 Reporting Requirements (due within 90 days)			
Description of emission control equipment used	☐	☐	
If fabric filter see 61.23	☐	☐	
61.25 Active Waste Disposal Site Requirements			
Warning signs	☐	☑	
Fencing or natural barrier	☐	☐	
Control method 6 inches of cover per 24 hour day	☐	☐	
Control method approved dust suppression agent per 24 hour day	☐	☐	